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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,990	05/04/2005	Andreas Wunderlich	040085.00004	2585

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EXAMINER

MITCHELL, KATHERINE W

ART UNIT	PAPER NUMBER
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3677

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/533,990	Applicant(s) WUNDERLICH, ANDREAS	
	Examiner Katherine W. Mitchell	Art Unit 3677	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 5/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/4/2005; 12/12/2005</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

- On the top of page 4:

"When unwound and flattened out, the thread will thus appear to be a row of laterally offset rectangles whose right-hand edge is aligned on the left-hand edge of the next rectangle." does not make sense. Does applicant mean that the **right hand edge** of an offset rectangle is aligned **with** the left hand edge of the next rectangle? How is "next rectangle" defined?

- On page 5, "the leading edge 6 of every tooth 7 lies on a line passing through the centerline ... ie the screw's longitudinal axis.... Is not shown, or, for that matter, possible. **Each** leading edge lies on a line, but **the** leading edge of **every** tooth cannot lie on a {single} line.

- At the top of page 6,

:"The leading edges 6 of the teeth, .which are actually surfaces, blend into radial edges 11 on the teeth 7, where those edges 1 1 are configured in the form of either the leading edge of a tooth or the trailing edge of a tooth."

- The leading edges of the teeth blend into the radial edges, but then the radial edges are described as configured in the form of the leading edge.

This is circular logic. Appropriate correction is required.

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- Page 6 has leading edges 6 of teeth (line 1), radial edges 11 on teeth 7 (lines 1-2) and leading edges 11 of teeth 7 (line 5 up from the bottom of the page, page 6).

Drawings

2. The drawings are objected to because they are hard to correlate between views. For example, where is the central axis (8) in Fig 5. (note that 8 is the intersection point of the two dashed lines in Fig 3). Examiner cannot determine how Figs 3, 4, and 5 correspond. For example- how is the dashed line in Fig 4 related to the dashed lines in Fig 3? Where did/does the face 12 of a tooth 7 appear in Fig 1, 3 or 4, or rather where should it appear -- would "12" be the unlabeled portion between the two 15's of Fig 4? Where is "arrow V" of Fig 3 (page 6, line 6)? Fig 1 does not agree with Fig 3 or 5 - Fig 1 clearly shows a smooth continuous thread, not the sawtooth or alternately inclined teeth of all the claims and Fig 3 and 5. Also, examiner does not see how a view as described for Fig 4 would not show the laterally offset adjacent teeth as shown in Fig 3 and 5. How is Fig 5 a top view of anything? Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several

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views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Certain Claims are objected to because of the following informalities --

Claim 3 ends with a comma and a period.

Claim 6 ends with 2 periods.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. REPRESENTATIVE EXAMPLES are described below:

Claim 1 has only "a side of the thread that faces away from the head" but numerous other claims recite "at least one side" or "the sides". How are the sides other than "a side" in claim 1 defined? Further, what is "a centerline" - centerline of what? And what is "their full lengths"--length in what direction?

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Regarding claim1, the phrase "such as" , even in the preamble, renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 14 refers to the depths of the notches, but neither depth nor notches has antecedent basis in the claim.

Claim 3, the screw's longitudinal axis lacks antecedent basis.

Claim 4 and claim 5, the crest lacks antecedent basis.

Claim 6 - are the alternating protrusions and notches in addition to the inclined teeth?

Claim 8 has a row of laterally offset teeth, but this depends on claim 1, which has cutting teeth. This requires the laterally offset teeth to be distinct from the cutting teeth.

Claim 11 and claim 12, the included angle lacks antecedent basis.

Claim 12, the transition zone lacks antecedent basis. Also, the sides is claimed, but only "a side" has been described.

Claim 13, the screw's longitudinal axis lacks antecedent basis.

Claim 3, the width of their face (both width and face) lacks antecedent basis.

Claim 14, in addition to being too many options to clearly understand -- what is "the set of the teeth" - it lacks antecedent basis. Further, How would such a set which is not described vary over the length of the screw's shaft? Vary in shape, or in size, or in color, or how? What is being claimed?

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Claim 11, to a screw not in combination with a substrate, requires knowledge of an undescribed and unclaimed drilled hole to determine the thread structure. How would someone looking at a screw know if it met this limitation, absent a dimension?

ALL claims should be reviewed for similar problems. . Appropriate correction is required.

NOTE: Examiner is particularly confused because claim 1 clearly has the teeth formed on a side of the thread that faces away from the head, which examiner assumes is shown in Fig 3. However, it seems that the only way to make sense of the intention is to have the teeth formed on the side facing away from the head AND the side facing toward the head (this seems to be indicated in Fig 4. However, applicant has specified a particular side, and examiner assumes that is what applicant wants, as there is not clear illustration of teeth on both sides. Also, examiner is very confused by what is meant by "cutting teeth... alternately inclined to the left and right of a centerline" in claim 1 - she does not see the limitation in any figure. Note that as worded, the teeth themselves, not the faces of a tooth, are alternately inclined-- where is this shown?

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

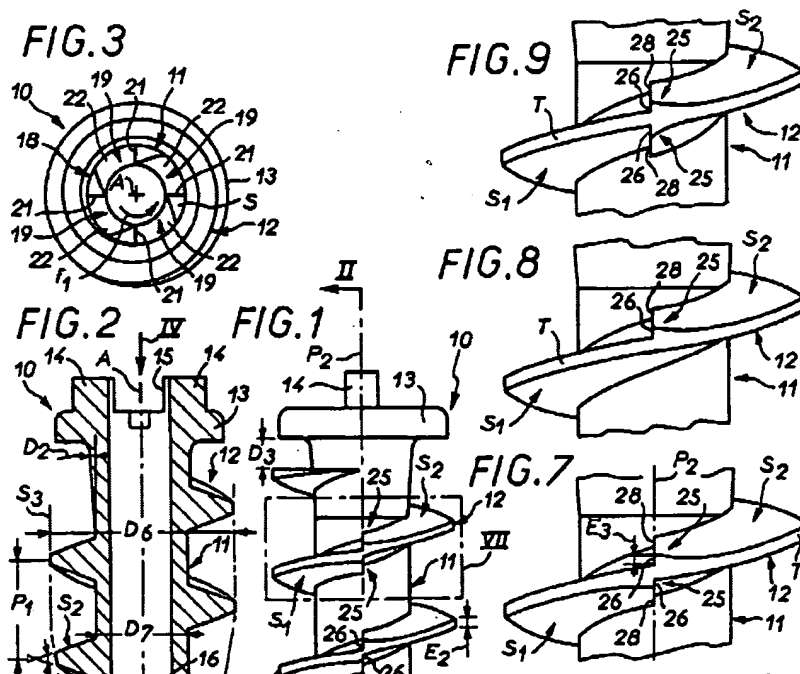
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. As best understood, claims 1,4,5, 7, 9, and 11-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Auger EP 0501860.

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Auger teaches in the Figures and abstract a screw capable for use on hard materials, with a shaft, head at one end, tip, and a thread with cutting teeth on a thread side facing away from the head that are alternately inclined to the left and right of a centerline. The thread flattened crest forming a narrow face (T) with edges 28 extending across it. The edges on at least one side are roughly radially disposed and extend all the way down to the shaft (Fig 10, copied below, and Fig 6, not copied, best shows this). The included angle between sides S1 and S2 of the thread are in a range of 20-30 degrees at the portion due to penetrate the drilled hole wall. The included angle between sides S1 and S2 of the thread are in a range of 45 to 60 degrees over the transition zone immediately adjoining the shaft. Fig 7 and 8 show the teeth (on upper vs lower sides) offset from one another by the width of their face. The set of teeth vary over the shaft length- some are on one side, some are on the other, which is varied.

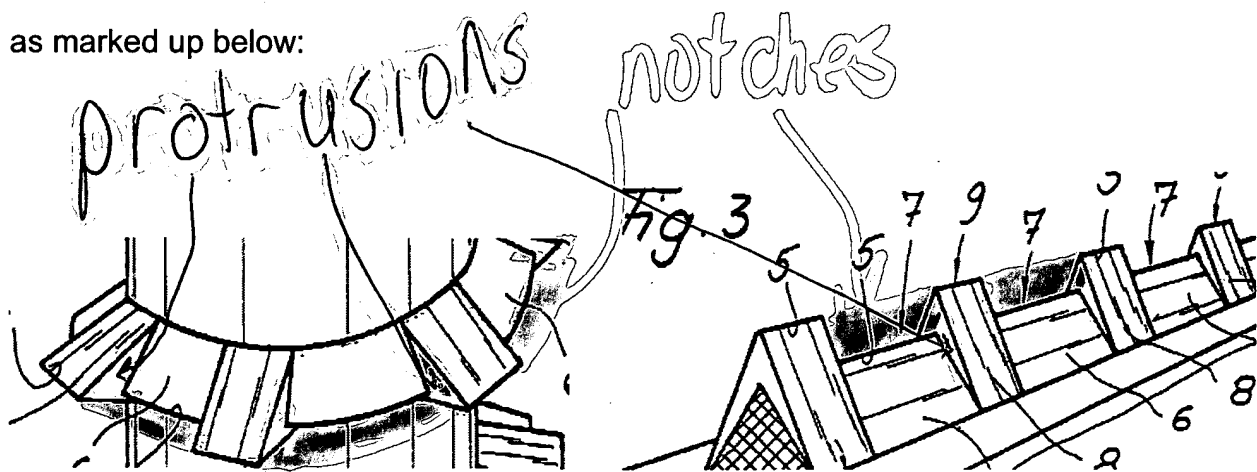
EP 0 501 860 A1



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8. As best understood, claims 1-3 and 5-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Munz DE 4206440.

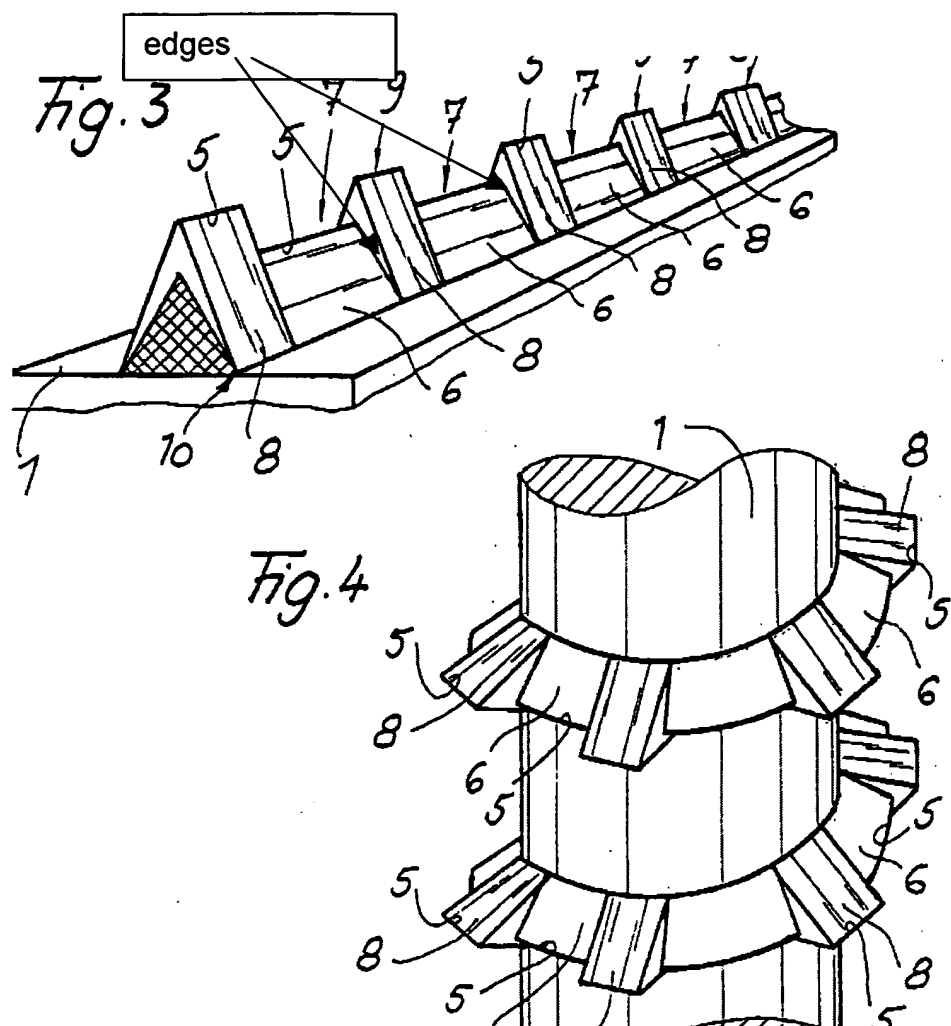
Munz teaches in the Figures and abstract a screw capable for use on hard materials, with a shaft, head at one end, tip, and a thread with cutting teeth on a thread side facing away from the head that are alternately inclined to the left and right of a centerline. The thread has a sawtooth profile with the leading edges of the sawteeth roughly radially disposed wrt the screw longitudinal axis (Fig 4). The thread crest has edges extending across it. The edges on at least one side are roughly radially disposed and extend all the way down to the shaft (Fig 4). The thread has a row of laterally offset teeth bordering on one another (fig 4). Note that the notches of a side are considered the "missing" material that would fill in past the outer edge 5 of main thread to be flush with the outer edges of sawteeth at "5"; the protrusions are the 'height' of the sawteeth as marked up below:



The notches do not extend all the way to the shaft. The included angle between sides S1 and S2 of the thread are in a range of around 20-30 degrees at the portion due to penetrate the drilled hole wall. The included angle between sides S1 and S2 of the

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thread are in a range of around 45 to 60 degrees over the transition zone immediately adjoining the shaft.



Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 11-12 are rejected under 35 U.S.C. 102(b) as anticipated by Auger or, in the alternative, under 35 U.S.C. 103(a) as obvious over Auger in view of Leitold DE 4419988.

As discussed above, examiner believes claims 11-12 are fully anticipated by Auger, especially in view of the "around" wording of the ranges. However, if it is held that Auger does not fully anticipate the ranges, Leitold teaches a similar threaded screw with projections on the thread forming teeth. Further, Leitold teaches that included angle between sides S1 and S2 of the thread are in a range of around 20-30 degrees at the portion due to penetrate the drilled hole wall in the Figures and translated abstract, and teaches that the included angle between sides S1 and S2 of the thread are in a range of around 45 to 60 degrees over the transition zone immediately adjoining the shaft, also in the abstract and Figures. Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Auger and Leitold before him at the time the invention was made, to modify Auger as taught by Leitold to include the angle ranges of Leitold, in order to obtain a crew thread with sufficient strength and rigidity at the base of the threads at the shaft, while providing a cutting/insertion edge that can be inserted into a bore without difficulty. One would have been motivated to make such a combination because a strong insertable screw would have been obtained.

11. Claims 11-12 are rejected under 35 U.S.C. 102(b) as anticipated by Munz or, in the alternative, under 35 U.S.C. 103(a) as obvious over Munz in view of Leitold DE 4419988.

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As discussed above, examiner believes claims 11-12 are fully anticipated by Munz, especially in view of the "around" wording of the ranges. However, if it is held that Munz does not fully anticipate the ranges, Leitold teaches a similar threaded screw with projections on the thread forming teeth. Further, Leitold teaches that included angle between sides S1 and S2 of the thread are in a range of around 20-30 degrees at the portion due to penetrate the drilled hole wall in the Figures and translated abstract, and teaches that the included angle between sides S1 and S2 of the thread are in a range of around 45 to 60 degrees over the transition zone immediately adjoining the shaft, also in the abstract and Figures. Therefore, it would have been obvious to one of ordinary skill in the art, having the teachings of Munz and Leitold before him at the time the invention was made, to modify Munz as taught by Leitold to include the angle ranges of Leitold, in order to obtain a crew thread with sufficient strength and rigidity at the base of the threads at the shaft, while providing a cutting/insertion edge that can be inserted into a bore without difficulty. One would have been motivated to make such a combination because a strong insertable screw would have been obtained.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

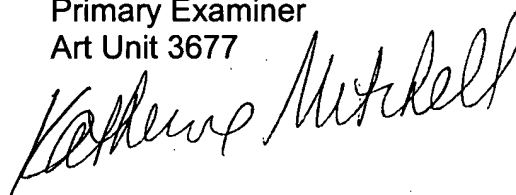
13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine W. Mitchell whose telephone number is 571-272-7069. The examiner can normally be reached on Mon - Thurs 10 AM - 8 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, J. J. Swann can be reached on 571-272-7075. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Katherine W Mitchell
Primary Examiner
Art Unit 3677

A handwritten signature in black ink, appearing to read "Katherine W Mitchell", written over the printed name and title.

1/19/2007